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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	36

Application Number	10/643,831
Filing Date	08/19/03
First Named Inventor	McMurray, et al.
Art Unit	3644
Examiner Name	Trinh T. Nguyen
Attorney Docket Number	R087 1270.1

ENCLOSURES *(Check all that apply)*

- [✓] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [✓] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [✓] Other Enclosure(s) (please Identify below):

See Return Postcard

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Womble Carlyle Sandridge & Rice, PLLC		
Signature	Dana E. Stano		
Printed name	Dana E. Stano		
Date	April 3, 2006	Reg. No.	50,750

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Sheila M. Gray	Date	April 3, 2006

PTO/SB/17 (12-04v2)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) $0.00

Complete if Known	
Application Number	10/643,831
Filing Date	08/19/03
First Named Inventor	McMurray, et al.
Examiner Name	Trinh T. Nguyen
Art Unit	3644
Attorney Docket No.	R087 1270.1

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 09-0528 Deposit Account Name: Womble Carlyle et al.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	FILING FEES Small Entity Fee ($)	SEARCH FEES Fee ($)	SEARCH FEES Small Entity Fee ($)	EXAMINATION FEES Fee ($)	EXAMINATION FEES Small Entity Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee ($)	Fee Paid ($)
28 - 20 or HP =	0	x _____	= _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee ($)	Fee Paid ($)
4 - 3 or HP =	0	x _____	= _____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims Fee ($)	Multiple Dependent Claims Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee ($)	Fee Paid ($)
_____ - 100 =	_____ / 50 =	_____ (round up to a whole number)	x _____	= _____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	_____
Other (e.g., late filing surcharge): _____	_____

SUBMITTED BY

Signature	Dana E. Stano	Registration No. (Attorney/Agent) 50,750	Telephone (404) 962-7524
Name (Print/Type)	Dana E. Stano		Date April 3, 2006

AF
ZFW

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	)		
McMurray, et al.	)	**Group Art Unit:**	**3644**
Serial No: **10/643,831**	)	**Examiner:**	**Trinh T. Nguyen**
Filed: **August 19, 2003**	)	**Docket No.:**	**R087 1270.1**

For: **LEAD ATTACHED SABOT SLUG**

SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Supplemental Appeal Brief is submitted in response to the Notification of Non-Compliant Appeal Brief mailed on March 9, 2006, and replaces the Appeal Brief submitted on December 9, 2005 pursuant to 37 C.F.R. §41.37 in support of the Notice of Appeal filed on October 13, 2005. Further to the telephonic Examiner interview on March 31, 2006, additional headings have been placed in "bold" to differentiate them further from the text. Additionally, a typographical error has been corrected in the numbering of sections d through g on pages 27 and 28.

No fee is believed due. However, the Commissioner is authorized to charge any fees that may be required, or credit any deposit due, to Deposit Account No. 09-0528.

1. REAL PARTY IN INTEREST

The real party in interest in the present application is R.A. Brands LLC, Madison, North Carolina.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

3. STATUS OF CLAIMS

Claims 1-4, 6-20, 22, 23, and 25-31 are pending in this application and are subject to the present appeal. Claims 21 and 24 were canceled during prosecution. A listing of pending claims 1-4, 6-20, 22, 23, and 25-31 is set forth in the attached Claims Appendix.

4. STATUS OF AMENDMENTS

A first Office Action was mailed to Applicant on May 20, 2004. In this Office Action, claims 1-31 were pending and claims 1-31 were rejected. On August 20, 2004, Applicant filed a response in which claims 1, 8, 22, and 27 were amended. The Examiner issued a final Office Action on November 29, 2004, in which the rejection of claims 1-31 was maintained.

On February 14, 2005, Applicant filed a Request for Continued Examination. Concurrently therewith, Applicant filed an Amendment in which claims 1, 8, 22, and 27 were amended and claims 5 and 24 were canceled. A non-final Office Action was mailed on March 14, 2005. In this Office Action, claims 1-4, 6-23, and 25-31 were pending and claims 1-4, 6-23, and 25-31 were rejected over the previously cited references. The undersigned conducted a telephonic interview with the Examiner on May 25, 2005. Applicant filed an Amendment on May 26, 2005 amending claims 1, 8, 22, and 27 further to the Examiner interview. A final Office Action was mailed on August 4, 2005. Claims 1-4, 6-23, and 25-31 were pending and claims 1-4, 6-23, and 25-31 were rejected using a new primary reference.

On October 13, 2005, Applicant filed a Response After Final Rejection. No amendments were presented. A Notice of Appeal, upon which this Appeal Brief is based, was filed concurrently with the Response After Final Rejection on October 13, 2005.

5. SUMMARY OF CLAIMED SUBJECT MATTER

In accordance with 37 CFR §41.37, a concise explanation of the subject matter defined in each of the independent claims involved in the Appeal is set forth below. References to pages and lines of the specification are designated "page: lines" and references to the drawings are indicated by reference numerals. It will be understood that such references are provided merely as examples of supporting language, and are not intended to be construed as the sole basis for the claimed element.

1. A sabot, comprising: a compression section defining a payload receiving chamber at a forward end of the sabot for receiving a slug therein,	The sabot generally comprises two sections that can be integrally formed or can be attached as stages or sections. The **forward portion** or that portion of the firearm round that is the greatest distance from the charge comprises the compression section 10. [5:4-7] The sabot includes a **compression section defining a payload receiving chamber**. [2:11-12]
the compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof; and	The compression section 10 generally includes a plurality of interconnected fins 20 that define or form the accordion shaped compression section 10. [5:8-10] As shown in Figure 4, **a combination of internal and external ridges forms the plurality of interconnected fins** 20 which allows the compression section 10 to collapse and, upon firing, the base of the stem 22 of the slug 6 and the bottom of the cavity in the compression section 10 are driven together with sufficient force to reform the slug 6. [6:10-14]

a solid section extending rearwardly from the compression section;	The **reward [sic] section comprises the solid section** 12. [5:7-8]
wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume change.	The compression section 10 generally includes a plurality of interconnected fins 20 that define or form the accordion shaped compression section 10. The fins 20 are further **collapsible** so as to, partially, compact as the round 2 is discharged from the firearm. [5:8-11] The **collapse of the compression section 10 produces a volume change** to the substantially solid plastic column at the sabot, which allows the internal ballistic characteristics to be modified for optimum performance. [5:17-19]
2. The sabot of claim 1, wherein the compression section further includes a locking ring mounted within the payload receiving chamber for engaging the slug.	Additionally, a **locking ring** 19 generally is **mounted in the payload receiving chamber** 8 and engages the slug 6 received therein. [6:21-22]
3. The sabot of claim 1, wherein the payload receiving chamber further includes a post.	The bottom of the payload receiving chamber 8 also has a **post** 16, as shown in Figure 4, which facilitates the expansion of the slug stem 22. [6:17-19]
4. The sabot of claim 1, wherein the solid section includes a powder cup section formed opposite the compression section.	Furthermore, the sabot 4 includes a propellant **powder cup section** 14 formed at the rearward section or end of the solid section 12 of the sabot 4 **closest to the propellant charge** for the round. [7:6-8]
6. The sabot of claim 1, wherein the sabot comprises a high density polyethylene.	The sabot 4 may be made from linear, **high-density polyethylene** (HDPE). [5:2-3]
7. The sabot of claim 1, wherein the sabot is axisymmetric.	The compression section 10 is an **axisymmetric** body of rotation. [6:4]
8. A firearm round, comprising: a sabot including a compression section defining a payload receiving chamber therein and a solid section connected to the compression section,	The sabot generally comprises two sections that can be integrally formed or can be attached as stages or sections. The **forward portion** or that portion of the firearm round that is the greatest distance from the charge comprises the compression section 10.[5:4-7] The sabot includes a **compression section defining a payload receiving chamber**. [2:11-12]

a solid section connected to the compression section,	The **reward [sic] section comprises the solid section** 12. [5:7-8]
said compression section including a plurality of alternating ridges on an interior and an exterior surface thereof; and	As shown in Figure 4, **a combination of internal and external ridges forms the plurality of interconnected fins** 20 which allows the compression section 10 to collapse and, upon firing, the base of the stem 22 of the slug 6 and the bottom of the cavity in the compression section 10 are driven together with sufficient force to reform the slug 6. [6:10-14]
a slug received and fitted within the payload receiving chamber of the sabot;	The **slug 6 is received and fitted within the payload receiving chamber 8 of the sabot** 4. [7:21-22]
wherein the compression section is adapted to at least partially collapse upon firing to produce a volume change.	The compression section 10 generally includes a plurality of interconnected fins 20 that define or form the accordion shaped compression section 10. The fins 20 are further **collapsible** so as to, partially, compact as the round 2 is discharged from the firearm. [5:8-11] The **collapse of the compression section 10 produces a volume change** to the substantially solid plastic column at the sabot, which allows the internal ballistic characteristics to be modified for optimum performance. [5:17-19]
9. The firearm round of claim 8, wherein the slug comprises a nose, a driving band adjacent the nose and a stem connected to the driving band.	Typically, the slug 6 is formed from lead or a lead alloy, and will include a **nose 26, a driving band 24 positioned adjacent the nose 26, and a stem 22 connected to and extending rearwardly from the driving band** 24. [7:22-23 – 8:1-2]
10. The firearm round of claim 9, wherein the nose of the slug includes a nose cavity.	Furthermore, a **nose cavity 30 can be located in the nose 26 of the slug**. [9:10-11]
11. The firearm round of claim 9, wherein the stem of the slug includes a post cavity.	The **stem also has a shallow cavity in its base, or a post cavity** 28, which engages the post 16 in the payload receiving chamber 8 to aid in centering the slug 6 in the sabot 4 as it is formed. [8:18-20]

12. The firearm round of claim 11, wherein the payload receiving chamber of the sabot includes a post fitted within the post cavity of the slug	The bottom of the **payload receiving chamber 8 also has a post** 16, as shown in Figure 4, which facilitates the expansion of the slug stem 22. The post 16 is not a requirement, as the stem of the slug will "nail-head" significantly without it. [6:17-19] The stem also has a shallow cavity in its base, or a **post cavity 28, which engages the post** 16 in the payload receiving chamber 8 to aid in centering the slug 6 in the sabot 4 as it is formed. [8:18-20]
13. The firearm round of claim 9, wherein the driving band includes a length less than about 25% of the overall diameter of the firearm round.	13. The firearm round of claim 9, wherein the driving band includes **a length less than about 25% of the overall diameter of the firearm round.** [11: original claim 13]
14. The firearm round of claim 9, wherein the stem has a diameter less than a diameter of the driving band.	14. The firearm round of claim 9, wherein **the stem has a diameter less than a diameter of the driving band.** [11: original claim 14]
15. The firearm round of claim 8, wherein the slug comprises at least about 95% by weight lead.	In greater detail, the **slug** 6 projectile may be composed of about **95% by weight lead or greater** and may include antimony or other materials as known in the art. [8:2-4]
16. The firearm round of claim 15, wherein the slug further comprises antimony.	In greater detail, the **slug** 6 projectile may be composed of about 95% by weight lead or greater and may include **antimony or other materials** as known in the art. [8:2-4]
17. The firearm round of claim 8, wherein the slug is plated or jacketed.	Additionally, the slug could be **coated or plated** with a number of materials in order to improve the functional or ballistic characteristics of the system. [8:4-5]
18. The firearm round of claim 8, wherein the sabot comprises a high density polyethylene.	The sabot 4 may be made from linear, **high-density polyethylene** (HDPE). [5:2-3]
19. The firearm round of claim 8, wherein the compression section of the sabot further comprises a locking ring mounted within the payload receiving chamber so as to engage the slug.	Additionally, **a locking ring** 19 generally is **mounted in the payload receiving chamber 8 and engages the slug** 6 received therein. [6:21-22]

20. The firearm round of claim 8, wherein the solid section of the sabot includes a powder cup.	Furthermore, the sabot 4 includes a propellant **powder cup section 14** formed at the rearward section or end of **the solid section** 12 of the sabot 4 closest to the propellant charge for the round. [7:6-8]
22. A sabot, comprising: a compression section defining a payload receiving chamber therein,	The sabot includes a **compression section defining a payload receiving chamber.** [2:11-12]
said compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior surface and exterior surface thereof;	As shown in Figure 4, **a combination of internal and external ridges forms the plurality of interconnected fins** 20 which allows the compression section 10 to collapse and, upon firing, the base of the stem 22 of the slug 6 and the bottom of the cavity in the compression section 10 are driven together with sufficient force to reform the slug 6. [6:10-14]
a post integrally formed within the payload receiving chamber;	In an alternative embodiment, the firearm round includes a sabot having a compression section defining a payload receiving chamber therein and **a post integrally formed within the payload receiving chamber.** [3:5-7]
a locking ring residing within the payload receiving chamber; and	Additionally, **a locking ring 19 generally is mounted in the payload receiving chamber** 8 and engages the slug 6 received therein. [6:21-22]
a solid section connected to the compression section;	**A solid section is connected to the compression section** and a slug is fitted to the post of the sabot and rests on the compression section of the sabot. [3:7-9]

wherein said compression section is adapted to at least partially collapse upon firing, while remaining substantially intact, to produce a volume change.	The compression section 10 generally includes a plurality of interconnected fins 20 that define or form the accordion shaped compression section 10. The fins 20 are further **collapsible** so as to, partially, compact as the round 2 is discharged from the firearm. [5:8-11] **The collapse of the compression section 10 produces a volume change** to the substantially solid plastic column at the sabot, which allows the internal ballistic characteristics to be modified for optimum performance. [5:17-19]
23. The sabot of claim 22, wherein the solid section includes a powder cup section.	Furthermore, **the sabot 4 includes a propellant powder cup section** 14 formed at the rearward section or end of the solid section 12 of the sabot 4 closest to the propellant charge for the round. [7:6-8]
25. The sabot of claim 22, wherein the sabot comprises a high-density polyethylene, low-density polyethylene, linear, high-density polyethylene, and combinations thereof.	The sabot 4 may be made from linear, **high-density polyethylene** (HDPE). However, a **wide variety of polymers** could serve as a suitable material. [5:2-4] 25. The sabot of claim 22, wherein the sabot **comprises a high-density polyethylene, low-density polyethylene, linear, high-density polyethylene, and combinations thereof**. [13: original claim 25]
26. The sabot of claim 22, and further comprising a projectile received within the payload receiving chamber and extending forwardly from the compression section.	Figures 7 and 8 illustrate an alternative embodiment where the slug is substantially hollow and **projects forwardly from the compression section 10 of the sabot** 4. [4:20-22]
27. A firearm round, comprising: a sabot including a compression section defining a payload receiving chamber therein,	The sabot includes a **compression section defining a payload receiving chamber**. [2:11-12]

said compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior and exterior surface thereof,	As shown in Figure 4, **a combination of internal and external ridges forms the plurality of interconnected fins** 20 which allows the compression section 10 to collapse and, upon firing, the base of the stem 22 of the slug 6 and the bottom of the cavity in the compression section 10 are driven together with sufficient force to reform the slug 6. [6:10-14]
a post integrally formed within the payload receiving chamber and	In an alternative embodiment, the firearm round includes a sabot having a compression section defining a payload receiving chamber therein and **a post integrally formed within the payload receiving chamber**. [3:5-7]
a solid section projecting rearwardly from the compression section;	**A solid section is connected to the compression section** and a slug is fitted to the post of the sabot and rests on the compression section of the sabot. [3:7-9]
a slug fitted to the post of the sabot;	The **slug 6 is received and fitted within the payload receiving chamber 8 of the sabot** 4. [7:21-22]
wherein said compression section is adapted to at least partially annularly collapse upon firing to produce a volume change.	**The collapse of the compression section 10 produces a volume change** to the substantially solid plastic column at the sabot, which allows the internal ballistic characteristics to be modified for optimum performance. [5:17-19] The compression section 10 is an axisymmetric body of rotation. This allows for substantially uniform, **annular compression** of the plastic material forming the compression section during the inertial setback of the slug round during firing, which allows the natural centering of the slug post with the sabot and consequently with the bore. [6:4-8]

28. The firearm round of claim 27, wherein the slug comprises a stem defining a chamber adapted to receive the post of the sabot.	The **stem also has a shallow cavity in its base, or a post cavity 28, which engages the post** 16 in the payload receiving chamber 8 to aid in centering the slug 6 in the sabot 4 as it is formed. [8:18-20]
29. The firearm round of claim 27, wherein the slug projects forwardly from the compression section of the sabot.	Figures 7 and 8 illustrate an alternative embodiment where the **slug is substantially hollow and projects forwardly from the compression section 10 of the sabot** 4. [4:20-22]
30. The firearm round of claim 27, wherein the post substantially fills the payload receiving chamber.	Additionally, a **post 16 substantially fills the payload receiving chamber** 8. [4:22]
31. The firearm round of claim 27, wherein the slug comprises at least about 95% by weight lead.	31. The firearm round of claim 27, wherein the slug comprises at least about **95% by weight lead**. [14: original claim 31]

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 4, 7, 8 and 20 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,073,560 to *Stone*.

Claims 2 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 4,939,997 to *Hoffman*.

Claims 3, 9, 11-14, and 27-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 6,481,356 to *Gualandi*.

Claims 6, 10, 15, 16, and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.*

Claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,361,701 to *Stevens*.

Claims 22, 23, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and *Hoffman*.

Claim 25 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and *Hoffman*, and further in view of *Dippold*.

Claim 31 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and further in view of *Dippold*.

7. ARGUMENT

A. Claims 1, 4, 7, 8, and 20 were improperly rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,073,560 to *Stone*.

In the final Office Action mailed August 4, 2005, claims 1, 4, 7, 8, and 20 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,073,560 to *Stone*. Claims 1 and 8 are independent claims. Claims 4 and 7 depend directly or indirectly from claim 1. Claim 20 depends from claim 8. Thus, for purposes of this rejection, claims 1, 4, and 7 are considered jointly, and claims 8 and 20 are considered jointly. Claims 1 and 8 are set forth below (with emphasis added).

> 1. A sabot, comprising:
>
> a *compression section* defining a payload receiving chamber at a forward end of the sabot for receiving a slug therein, the compression section including a *plurality of fins* defined by a *combination of alternating ridges on an interior and an exterior surface thereof*; and
>
> a solid section extending rearwardly from the compression section;
>
> wherein the compression section is adapted to *at least partially collapse* upon firing while *remaining substantially intact* to produce a volume change.
>
> 8. A firearm round, comprising:
>
> a sabot including a *compression section* defining a payload receiving chamber therein and a solid section connected to the compression section, said compression section including a *plurality of alternating ridges on an interior and an exterior surface thereof*; and
>
> a slug received and fitted within the payload receiving chamber of the sabot;
>
> wherein the compression section is adapted to *at least partially collapse* upon firing to produce a volume change.

As an initial matter, it is noted that *Stone* is not available as a §103(e) reference. Thus, it is assumed herein that the reference was intended to be applied under §102(b).

1. Standard for anticipation under 35 U.S.C. §102(b)

According to §102(b), a person shall be entitled to a patent unless—

...

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

...

It is well established that "[a] claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added); MPEP §2131.

2. *Stone* cannot anticipate claims 1, 4, 7, 8, and 20 because it fails to teach or suggest each element of the claimed invention.

Stone is directed generally to a sabot for holding a sub-caliber projectile (*see* Abstract). The sabot includes a plurality of petals that extend from the back section towards the front section of the sabot (col. 3, lines 11-12). The petals form an internal cavity for holding a projectile (col. 3, lines 12-13). According to the Office Action,

> *Stone* discloses a sabot comprising a compression section (214, 212) defining a payload receiving chamber (240) at a forward end of the sabot for receiving a slug (50) therein, the compression section including a plurality of fins (220, 221, 223) defined by a combination of alternating ridges on an interior and an exterior surface thereof; and a solid section (216) extending rearwardly from the compression section; wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume change.

(Office Action, p. 2, para. 2). It is respectfully submitted that the Examiner's assessment is erroneous for at least the following reasons.

a. *Stone* fails to teach or suggest a compression section as set forth in claims 1, 4, 7, 8, and 20.

First, *Stone* fails to teach or suggest a sabot or firearm round including a "compression section" as set forth in claims 1 and 8, and their respective dependent claims 4, 7, and 20. According to *Stone*,

> It will be readily understood that the sabot 10 and the projectile contained therein will be subjected to a spinning rotation as they exit the rifled barrel. This rotation will exert a centrifugal force on each petal 20... Because each petal 20 is attached to back section 16, *the resultant movement of each petal responsive to the centrifugal force will be as illustrated in FIG. 5*. In that figure, each petal 20 has rotated to an open position. *Effectively, each petal 20 is subjected to a moment arm action created about the point where each petal is attached to the back section 16.* The centrifugal force acting on the front section 12 and concentrated at the locations of the high mass portions serves to promote the release of projectile 50 from sabot 10.

(col. 4, line 20-37) (emphasis added).

As shown in FIG. 5 of *Stone*, the petals 20 of *Stone* are designed to open in a direction *away from* the sabot to release the projectile 50 therefrom.

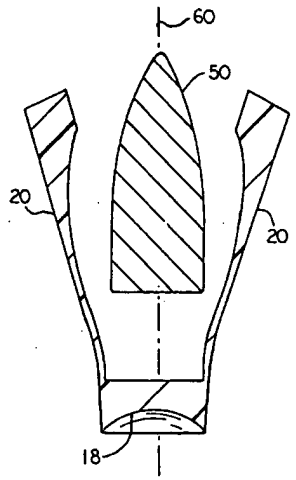


FIG. 5

In sharp contrast, the sabot or firearm round 2 of the pending application includes a compression section 10 adapted to *compress* or collapse upon firing, as shown in FIG. 1.

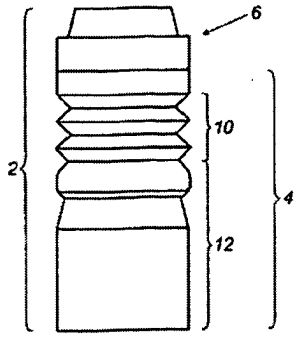


Fig. 1

Given that *Stone* specifically teaches outwardly separating petals and fails to teach or suggest a sabot or firearm round having a compression section, *Stone* is insufficient to support a rejection of claims 1, 4, 7, 8, and 20 under 35 U.S.C. §102(b).

b. *Stone* fails to teach or suggest a plurality of fins or alternating ridges on an interior surface and an exterior surface as set forth in claims 1, 4, 7, 8, and 20.

Furthermore, the sabot of *Stone* does not include a compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, as set forth in claim 1 and its associated dependent claims 4 and 7. Likewise, the sabot of *Stone* does not include a compression section including a plurality of alternating ridges on an interior and an exterior surface thereof, as set forth in claim 8 and its associated dependent claim 20. Instead, the sabot of *Stone* includes a plurality of petals that extend from the back section of the sabot to the front section of the sabot and flare outwardly from the projectile (col. 3, lines 11-12) (*see* petals 20, FIG. 5 above). The petals do not include a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof (pending claims 1, 4, and 7), nor do the petals include a plurality of alternating ridges on an interior and an exterior surface thereof (pending claims 8 and 20). Thus, *Stone* is insufficient to support a rejection of claims 1, 4, 7, 8, and 20 under 35 U.S.C. §102(b).

c. *Stone* fails to teach or suggest a firearm round that substantially remains intact upon firing, as set forth in claims 1, 4, 7, 8, and 20.

Furthermore, in sharp contrast to the firearm round of claim 8 and its associated dependent claim 20, the sabot of *Stone* does not remain substantially intact with the slug or projectile upon firing. Instead, the sabot of *Stone* is designed to facilitate rapid separation of the sabot and projectile upon firing. According to *Stone*,

> As can be seen in FIG. 5, *the petals 20 open quickly* to create an *exit path* for projectile 50. Simultaneously, sabot 10 loses its initial relatively aerodynamic shape and takes on a shape which creates a great deal of drag. The speed of sabot 10 relative to projectile 50 decreases rapidly thus *promoting separation of the sabot 10 from projectile 50.*

(col. 4, lines 37-44) (emphasis added).

Given that *Stone* fails to teach or suggest a sabot or firearm round that substantially remains intact upon firing, *Stone* is insufficient to support a rejection of claims 8 and 20 under 35 U.S.C. §102(b).

B. Claims 1-4, 6-20, 22, 23, and 25-31 were improperly rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,073,560 to *Stone* in view of one or more of U.S. Patent No. 6,481,356 to *Gualandi*, U.S. Patent No. 4,939,997 to *Hoffman*, U.S. Patent No. 5,263,418 to *Dippold et al.*, and U.S. Patent No. 5,361,701 to *Stevens*.

In the final Office Action mailed August 4, 2005, claims 1-4, 6-20, 22, 23, and 25-31 were rejected over various combinations of *Stone* with *Gualandi*, *Hoffman*, *Dippold*, and *Stevens*. Claims 1, 8, 22, 27 are independent claims with claims 2-4, 6, 7, 9-20, 23, 25, 26, and 28-31 depending directly or indirectly therefrom. Claims 1, 8, 22, and 27 are set forth below with emphasis added.

> 1. A sabot, comprising:
>
> a *compression section* defining a payload receiving chamber at a forward end of the sabot for receiving a slug therein, the compression section including a *plurality of fins* defined by a *combination of alternating ridges on an interior and an exterior surface thereof*; and
>
> a solid section extending rearwardly from the compression section;
>
> wherein the compression section is adapted to *at least partially collapse* upon firing *while remaining substantially intact* to produce a volume change.

8. A firearm round, comprising:

a sabot including a *compression section* defining a payload receiving chamber therein and a solid section connected to the compression section, said compression section including a *plurality of alternating ridges on an interior and an exterior surface thereof*; and

a slug received and fitted within the payload receiving chamber of the sabot;

wherein the compression section is adapted to *at least partially collapse* upon firing to produce a volume change.

22. A sabot, comprising:

a *compression section* defining a payload receiving chamber therein, said compression section including a *plurality of fins* defined by a *combination of alternating internal and external ridges on an interior surface and exterior surface thereof*;

a post integrally formed within the payload receiving chamber;

a locking ring residing within the payload receiving chamber; and

a solid section connected to the compression section;

wherein said compression section is adapted to at least partially collapse upon firing, *while remaining substantially intact*, to produce a volume change.

27. A firearm round, comprising:

a sabot including a *compression section* defining a payload receiving chamber therein, said compression section including a *plurality of fins defined by a combination of alternating internal and external ridges on an interior and exterior surface thereof*, a post integrally formed within the payload receiving chamber and a solid section projecting rearwardly from the compression section;

a slug fitted to the post of the sabot;

wherein said compression section is adapted to *at least partially annularly collapse* upon firing to produce a volume change.

It is respectfully submitted that each of the various rejections is improper for at least the reasons set forth herein.

1. Standard for obviousness under 35 U.S.C. §103(a)

According to 35 U.S.C. §103(a),

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The basic test for evaluating obviousness is whether the claimed subject matter would have been obvious to a person having ordinary skill in the art to which the subject matter pertains in contemplation of the prior art. In *Graham v. John Deere & Co.*, 383 U.S. 1 (1966), the Supreme Court set forth various factual inquiries involved in the analysis:

(1) determining the scope and contents of the prior art;
(2) ascertaining the differences between the prior art and the claims at issue;
(3) resolving the level of ordinary skill in the pertinent art; and
(4) considering secondary evidence of non-obviousness.

In determining the scope and content of the prior art, the Examiner must first consider the nature of the problem that the inventor was attempting to address. The Examiner must then select, for purposes of comparing and contrasting with the claims at issue, prior art references that are reasonably pertinent to that problem (e.g., the inventor's field of endeavor). *See Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc.*, 21 F.3d 1068, 1071 (Fed. Cir. 1994). In selecting and applying or combining references, hindsight must be avoided.

The second factor described in *Graham* requires ascertaining the differences between the cited prior art and the claims at issue. In the instance case, the references fail to disclose the claimed invention, that is, claimed elements are absent.

In resolving the level of ordinary skill in the pertinent art, as required by the third factor of *Graham*, the Examiner must place himself or herself into the shoes of a person of ordinary skill in the art at the time the invention was made. The hypothetical person skilled

in the art is one who thinks along lines of conventional wisdom in the art and one who does not have the benefit of hindsight.

It is the burden of the Examiner to establish a *prima facie* case of obviousness when rejecting claims under 35 U.S.C. §103. *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference or combination of references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP §2142.

In setting forth an assertion of obviousness, the Examiner must present evidence, preferably in the form of some teaching, suggestion, incentive, or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art would have been led to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. *Ex parte Levengood*, 28 USPQ2d 1300, 1301 (Bd. Pat. App. & Interf. 1993); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985).

The legal conclusion of obviousness must be supported by facts or it cannot stand. *See Graham*. A rejection based on 35 U.S.C. §103(a) therefore clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art or "viewed after the event." *Goodyear Co. v. Ray-O-Vac Co.*, 321 U.S. 275, 279, 64 S.Ct. 593, 88 L.Ed. 721 (1944). The proper inquiry thus is whether it is obvious to combine the teachings of the references, and not whether one of ordinary skill, having the invention before him, would find it obvious through hindsight to construct the invention. Accordingly, an Examiner cannot establish obviousness by citing references that describe

various aspects of the invention without also providing evidence of the motivating force that would lead one skilled in the art to do what the inventor has done.

As regards the pending claims, while it is believed that there is no motivation to combine reference teachings and that there is no reasonable expectation of success in doing so, it is emphasized herein that, *arguendo*, even if *Stone* is properly combined with any of the cited references, the combination fails to teach or suggest all elements of Applicant's invention as set forth in claims 1-4, 6-20, 22, 23, and 25-31. As such, none of the references, alone or in combination, are sufficient to support a rejection under 35 U.S.C. §103(a).

2. *Stone* fails to teach or suggest various aspects of Applicant's claimed invention as set forth in claims 1-4, 6-20, 22, 23, and 25-31.

In particular, with respect to claim 1, *Stone* fails to teach, *inter alia*, a sabot comprising a compression section defining a payload receiving chamber at a forward end of the sabot for receiving a slug therein, the compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, and a solid section extending rearwardly from the compression section, where the compression section is adapted to at least partially collapse upon firing, while remaining substantially intact, to produce a volume change.

With respect to claim 8, *Stone* fails to teach, *inter alia*, a firearm round comprising a sabot including a compression section defining a payload receiving chamber therein and a solid section connected to the compression section, the compression section including a plurality of alternating ridges on an interior and an exterior surface thereof, and a slug received and fitted within the payload receiving chamber of the sabot, where the compression section is adapted to at least partially collapse upon firing to produce a volume change.

With respect to claim 22, *Stone* fails to teach, *inter alia*, a sabot comprising a compression section defining a payload receiving chamber therein, the compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior surface and exterior surface thereof, a post integrally formed within the payload receiving chamber, a locking ring residing within the payload receiving chamber, and a solid section connected to the compression section, where the compression section is

adapted to at least partially collapse upon firing, while remaining substantially intact, to produce a volume change.

With respect to claim 27 and its associated dependent claims, *Stone* fails to teach or suggest a firearm round comprising a sabot including a compression section defining a payload receiving chamber therein, the compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior and exterior surface thereof, a post integrally formed within the payload receiving chamber and a solid section projecting rearwardly from the compression section, and a slug fitted to the post of the sabot, where the compression section is adapted to at least partially annularly collapse upon firing to produce a volume change.

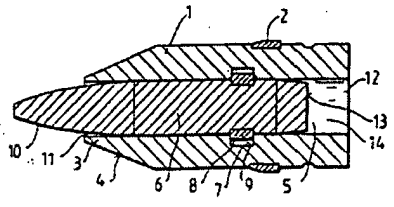
3. None of the cited references, alone or in combination, supplement the deficiencies of *Stone*.

It is respectfully submitted that none of the cited references, alone or in combination, supplement the deficiencies of *Stone*. As such, a *prima facie* case of obviousness has not been established for at least the following reasons.

a. Claims 2 and 19 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 4,939,997 to *Hoffman*.

In the final Office Action, claims 2 and 19 were rejected under U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 4,939,997 to *Hoffman*. *Hoffman* is directed to an article of ammunition equipped with a propulsion mechanism or sabot that is configured as a tubular projectile into which a projectile core is inserted (col. 2, lines 36-39). One embodiment of *Hoffman* is set forth in FIG. 3, reproduced below.

Fig.3



(i) Claim 2

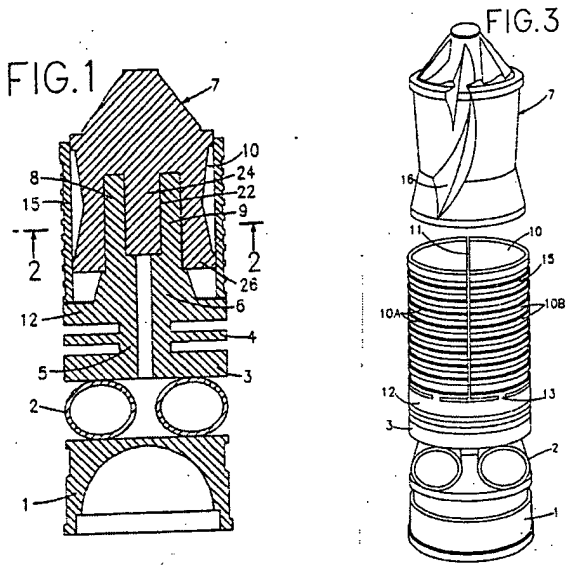
Claim 2 depends from claim 1. Like *Stone*, *Hoffman* fails to teach or suggest a compression section, as provided in claim 1. Further, *Hoffman* fails to teach or suggest a sabot including plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, nor does it teach or suggest a sabot that remains substantially intact with the slug upon firing. Given that neither *Stone* nor *Hoffman*, alone or in combination, teach or suggest each and every element of claim 1, the combination of *Hoffman* and *Stone* is insufficient to support a rejection of claim 1 or its associated dependent claim 2 under 35 U.S.C. §103(a).

(ii) Claim 19

Claim 19 depends from claim 8. *Hoffman* fails to teach or suggest a compression section, as provided in claim 8. With respect to claim 8, *Hoffman* fails to teach or suggest a firearm round including a combination of alternating ridges on an interior and an exterior surface thereof. Given that neither *Stone* nor *Hoffman*, alone or in combination, teach or suggest each and every element of claim 8, the combination of *Hoffman* and *Stone* is insufficient to support a rejection of claim 8 or its associated dependent claim 19.

b. Claims 3, 9, 11-14, and 27-30 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 6,481,356 to *Gualandi*.

In the final Office Action, claims 3, 9, 11-14, and 27-30 were rejected under U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 6,481,356 to *Gualandi*. *Gualandi* is directed to a body that axially supports a bullet on its end by a coaxial clutch on a column that extends into a seat for contact containment (col. 1, lines 10-13). The cylindrical seat 10 is formed by two half-parts 10A and 10B that are separated by longitudinal cuts 11 (col. 3, lines 38-41), as shown in FIGS. 1 and 3 of *Gualandi* (below). During firing, the *two half-parts separate* and are carried with the bullet, thereby avoiding frictional contact between the bullet and the inside wall of a barrel (col. 1, lines 10-23).



(i) Claim 3

Claim 3 depends from claim 1. It is submitted that *Gualandi* fails to teach or suggest a sabot including a compression section, as set forth in claim 1. Additionally, *Gualandi* fails to teach or suggest a sabot including plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof. Instead, *Gualandi* merely provides that "[e]ach of the half parts of the containment seat are provided on the *outer surface* thereof with curved reliefs..." (col. 2, lines 34, 35) (emphasis added). There is no teaching or suggestion in *Gualandi* that the curved reliefs permit the containment seat to *compress* upon firing, as with the alternating internal and external ridges of the present invention. In fact, *Gualandi* teaches away from this function and instead states that the curved reliefs create friction during travel through the barrel, thereby permitting the separation of the two half parts 10A and 10B (col. 4, lines 45-48).

Additionally, *Gualandi* fails to teach or suggest a sabot that remains substantially intact with the slug upon firing. Indeed, in sharp contrast to the present invention, the sabot of *Gualandi* is designed to *separate* upon firing, rather than remain substantially intact. According to *Gualandi*,

> The seat 10 as noted consists of two half parts 10A and 10B separated by the longitudinal cuts 11 perimetrally starting at one end from disk-shaped base 12 forming the bottom of the same seat at the connection points 13. *In the deflagration or firing moment, for centrifugal effect, a breaking of the*

> *connection points 13 happens together with a contemporaneous squeezing and opening of the half parts* on the inside wall of barrel 14 (see FIG. 8). This permits the bullet to move starting with a thrust pulse centering so as to obviate any possible contact with the inside wall of the barrel and also in the presence of a narrowing of the inside wall. *After the shooting, the two separated half parts follow the bullet along the inside wall of the barrel falling down at the exit end of the barrel* while the sole body also goes out from the barrel after the bullet.

(col. 4, lines 30-44) (emphasis added).

Given that neither *Stone* nor *Gualandi*, alone or in combination, teach or suggest each and every element of claim 1, the combination of *Stone* and *Gualandi* is insufficient to support a rejection of claim 1 or its associated dependent claim 3 under 35 U.S.C. §103(a).

(ii) Claims 9 and 11-14

Claims 9 and 11-14 depend directly or indirectly from claim 8. *Gualandi* fails to teach or suggest a sabot including a compression section, as discussed above with respect to claim 3. Further, *Gualandi* fails to teach or suggest a firearm round including a combination of alternating ridges on an interior and an exterior surface thereof.

Given that neither *Stone* nor *Gualandi*, alone or in combination, teach or suggest each and every element of claim 8, the combination of *Stone* and *Gualandi* is insufficient to support a rejection of claim 8 or its associated dependent claims 9 and 11-14 under 35 U.S.C. §103(a).

(iii) Claims 27-30

With respect to claim 27 and its associated dependent claims 28-30, *Gualandi* fails to teach or suggest a sabot including a compression section. As discussed above, *Gualandi* also fails to teach or suggest a firearm round including plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof. Furthermore, *Gualandi* fails to teach or suggest a firearm round having a compression section that is adapted to at least partially *annularly* collapse upon firing. Rather, *Gualandi* teaches a containment seat that separates upon firing.

Given that neither *Stone* nor *Gualandi*, alone or in combination, teach or suggest each and every element of claim 27, the combination of *Stone* and *Gualandi* is insufficient to

support a rejection of claim 27 and its associated dependent claims 28-30 under 35 U.S.C. §103(a).

c. Claims 6, 10, 15, 16, and 18 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.*

In the final Office Action, claims 6, 10, 15, 16 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.* *Dippold* is directed to a sabot bullet having a constricted waist, as shown in FIG. 1.

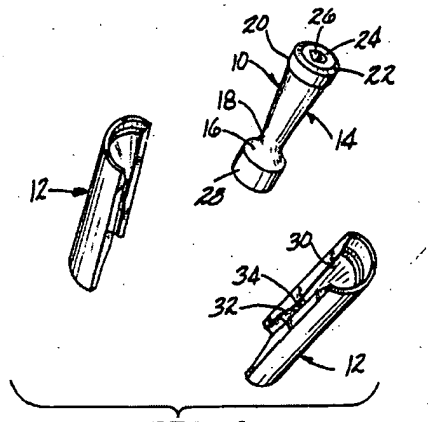


FIG-1

The sabot bullet has a tapered axial recess in the front end having a flat tapered side walls (col. 1, lines 48-52), as shown in FIG. 3A. According to *Dippold*,

> [e]ach flat side wall 36 joins with an adjacent side wall 36 at a corner 40. The corners 40 are preferably substantially sharp. Upon impact of the sabot bullet 10 in soft body tissue or, simulated by gelatin, the corners 40 split as the ogival end 22 *folds backwards and expands* to form petals 42 as are shown in FIGS. 3B and 3C.

(col. 2, lines 51-56) (emphasis added). FIGS. 3B-3C are presented below.

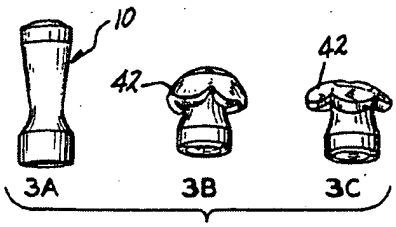


FIG-3

(i) Claim 6

Claim 6 depends from claim 1. *Dippold* fails to teach or suggest a sabot comprising a compression section, and further fails to teach or suggest a compression section including a plurality of fins defined by a combination of alternating internal and external ridges, as set forth in claim 1. Given that neither *Stone* nor *Dippold*, alone or in combination, teach or suggest each and every element of claim 1, the combination of *Stone* and *Dippold* is insufficient to support a rejection of claim 1 or its associated dependent claim 6 under 35 U.S.C. §103(a).

(ii) Claims 10, 15, 16, and 18

Claims 10, 15, 16, and 18 depend directly or indirectly from claim 8. *Dippold* fails to teach or suggest a firearm round comprising a compression section, and further fails to teach or suggest a including a plurality of alternating internal and external ridges, as set forth in claim 8. Given that neither *Stone* nor *Dippold*, alone or in combination, teach or suggest each and every element of claim 8, the combination of *Stone* and *Dippold* is insufficient to support a rejection of claim 8 or its associated dependent claims 10, 15, 16, and 18 under 35 U.S.C. §103(a).

d. Claim 17 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,361,701 to *Stevens*.

In the final Office Action, claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,361,701 to *Stevens*. Claim 17 depends from claim 8.

Stevens is directed to a shotgun tracer round for use in a shotgun barrel. According to *Stevens*,

> [t]he shotgun round of the present invention employs a slug with a central axially-aligned cavity in its base. The tracer charge is contained within the base central cavity.

(col. 1, lines 63-64).

> The slug is loaded in a conventional shotgun shell cartridge. The cartridge surrounds the slug and retains it with a conventional crimp. Beneath the slug is

> a wad which is preferably constructed of plastic and which has a narrow centrally aligned passageway of fusing channel which communicates with the igniter charge in the base of the slug. The wad has four petals which extend upwardly and surround the slug.

(col. 2, lines 7-14). FIG. 1 of *Stevens* is set forth below.

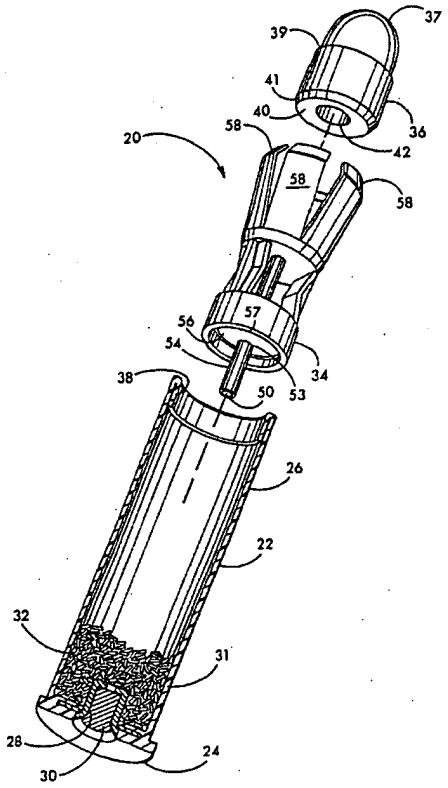


FIG. 1

Stevens fails to teach or suggest a firearm round comprising a compression section and, more particularly, *Stevens* fails to teach or suggest a firearm round including a compression section having a plurality of fins defined by a combination of alternating internal and external ridges, as set forth in claim 8.

Given that neither *Stone* nor *Stevens*, alone or in combination, teach or suggest each and every element of claim 8, the combination of *Stone* and *Stevens* is insufficient to support a rejection of claim 8 or its associated dependent claim 17 under 35 U.S.C. §103(a).

e. Claims 22, 23, and 26 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and of *Hoffman*.

In the final Office Action, claims 22, 23, and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and *Hoffman*. Claims 23 and 26 depend from claim 22.

As discussed above with respect to various other claims, both *Gualandi* and *Hoffman* fail to teach or suggest a sabot including a compression section, and further fail to teach or suggest a sabot including plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, as set forth in claim 22. Additionally, both *Gualandi* and *Hoffman* fail to teach or suggest a sabot that remains substantially intact with the slug upon firing.

Given that neither *Stone* nor *Gualandi* nor *Hoffman*, alone or in combination, teach or suggest each and every element of claim 8, the combination of *Stone*, *Gualandi*, and *Hoffman* is insufficient to support a rejection of claim 22 and its associated dependent claims 23 and 26 under 35 U.S.C. §103(a).

f. Claim 25 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and of *Hoffman*, and further in view of *Dippold*.

In the final Office Action, claim 25 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and *Hoffman*, and further in view of *Dippold*. Claim 25 depends from claim 22.

As stated above with respect to various other claims, neither *Gualandi* nor *Hoffman* teach or suggest a sabot including a compression section, or a sabot including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, as set forth in claim 22. Likewise, *Dippold* fails to teach or suggest a firearm round comprising a compression section, and further fails to teach or suggest a including a plurality of alternating internal and external ridges. Additionally, neither *Gualandi* nor *Hoffman* teach or suggest a sabot that remains substantially intact with the slug upon firing.

Given that none of *Stone*, *Gualandi*, *Hoffman*, or *Dippold*, alone or in combination, teach or suggest each and every element of claim 22, the combination of *Stone*, *Gualandi*, *Hoffman*, and *Dippold* is insufficient to support a rejection of claim 22 or its associated dependent claim 25 under 35 U.S.C. §103(a).

g. Claim 31 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and further in view of *Dippold*.

In the final Office Action, Claim 31 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and further in view of *Dippold*. Claim 31 depends from claim 27.

As stated above, neither *Gualandi* nor *Dippold* teach or suggest a firearm round including a compression section and, more particularly, neither *Gualandi* nor *Dippold* teach or suggest a compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, as set forth in claim 27. Furthermore, neither *Gualandi* nor *Dippold* teach or suggest a firearm round including a compression section adapted to at least partially annularly collapse upon firing.

Given that none of *Stone*, *Gualandi*, or *Dippold*, alone or in combination, teach or suggest each and every element of claim 27, the combination of *Stone*, *Gualandi*, and *Dippold* is insufficient to support a rejection of claim 27 or its associated dependent claim 31 under 35 U.S.C. §103(a).

4. A *prima facie* case under 35 U.S.C. §103(a) has not been established.

As stated previously, *Stone* fails to teach or suggest all elements of Applicant's claimed invention as set forth in claims 1-4, 6-20, 22, 23, and 25-31. None of the cited references, *Hoffman*, *Gualandi*, *Dippold*, or *Stevens*, cure the deficiencies of *Stone*. Given that none of the references, alone or in combination, teach or suggest all elements of Applicant's claimed invention, it is respectfully submitted that these references are insufficient to support a rejection of claims 1-4, 6-20, 22, 23, and 25-31 under 35 U.S.C. §103(a).

8. CLAIMS APPENDIX

A listing of the pending claims 1-4, 6-20, 22, 23, and 25-31 involved in the Appeal begins at page 31.

9. EVIDENCE APPENDIX

No evidence appendix is attached.

10. RELATED PROCEEDINGS APPENDIX

There are no related proceedings. Therefore, no related proceedings appendix is attached.

CONCLUSION

It is respectfully submitted that claims 1, 4, 7, 8 and 20 are not anticipated by U.S. Patent No. 6,073,560 to *Stone*. It further is submitted that claims 2 and 19 are patentable over *Stone* in view of U.S. Patent No. 4,939,997 to *Hoffman*; claims 3, 9, 11-14, and 27-30 are patentable over *Stone* in view of U.S. Patent No. 6,481,356 to *Gualandi*; claims 6, 10, 15, 16, and 18 are patentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.*; claims 6, 10, 15, 16 and 18 are patentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.*; claim 17 is patentable over *Stone* in view of U.S. Patent No. 5,361,701 to *Stevens*; claims 22, 23, and 26 are patentable over *Stone* in view of *Gualandi* and *Hoffman*; claim 25 is patentable over *Stone* in view of *Gualandi* and *Hoffman*, and further in view of *Dippold*; and claim 31 is patentable over *Stone* in view of *Gualandi* and further in view of *Dippold*.

For at least the reasons set forth herein, the each of the various rejections of pending claims 1-4, 6-20, 22, 23, and 25-31 by the U.S. Patent and Trademark Office is in error. As such, it is requested that the rejections be reversed and the pending claims be allowed. If there are any issues that can be resolved by telephone conference, or if there are any informalities that may be addressed by an Examiner's amendment, please contact the undersigned at (404) 879-2437.

Respectfully submitted,

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CLAIMS APPENDIX

1. A sabot, comprising:

a compression section defining a payload receiving chamber at a forward end of the sabot for receiving a slug therein, the compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof; and

a solid section extending rearwardly from the compression section;

wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume change.

2. The sabot of claim 1, wherein the compression section further includes a locking ring mounted within the payload receiving chamber for engaging the slug.

3. The sabot of claim 1, wherein the payload receiving chamber further includes a post.

4. The sabot of claim 1, wherein the solid section includes a powder cup section formed opposite the compression section.

5. (canceled)

6. The sabot of claim 1, wherein the sabot comprises a high density polyethylene.

7. The sabot of claim 1, wherein the sabot is axisymmetric.

8. A firearm round, comprising:

a sabot including a compression section defining a payload receiving chamber therein and a solid section connected to the compression section, said compression section including a plurality of alternating ridges on an interior and an exterior surface thereof; and

a slug received and fitted within the payload receiving chamber of the sabot;

wherein the compression section is adapted to at least partially collapse upon firing to produce a volume change.

9. The firearm round of claim 8, wherein the slug comprises a nose, a driving band adjacent the nose and a stem connected to the driving band.

10. The firearm round of claim 9, wherein the nose of the slug includes a nose cavity.

11. The firearm round of claim 9, wherein the stem of the slug includes a post cavity.

12. The firearm round of claim 11, wherein the payload receiving chamber of the sabot includes a post fitted within the post cavity of the slug.

13. The firearm round of claim 9, wherein the driving band includes a length less than about 25% of the overall diameter of the firearm round.

14. The firearm round of claim 9, wherein the stem has a diameter less than a diameter of the driving band.

15. The firearm round of claim 8, wherein the slug comprises at least about 95% by weight lead.

16. The firearm round of claim 15, wherein the slug further comprises antimony.

17. The firearm round of claim 8, wherein the slug is plated or jacketed.

18. The firearm round of claim 8, wherein the sabot comprises a high density polyethylene.

19. The firearm round of claim 8, wherein the compression section of the sabot further comprises a locking ring mounted within the payload receiving chamber so as to engage the slug.

20. The firearm round of claim 8, wherein the solid section of the sabot includes a powder cup.

21. (canceled)

22. A sabot, comprising:

a compression section defining a payload receiving chamber therein, said compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior surface and exterior surface thereof;

a post integrally formed within the payload receiving chamber;

a locking ring residing within the payload receiving chamber; and

a solid section connected to the compression section;

wherein said compression section is adapted to at least partially collapse upon firing, while remaining substantially intact, to produce a volume change.

23. The sabot of claim 22, wherein the solid section includes a powder cup section.

24. (canceled)

25. The sabot of claim 22, wherein the sabot comprises a high-density polyethylene, low-density polyethylene, linear, high-density polyethylene, and combinations thereof.

26. The sabot of claim 22, and further comprising a projectile received within the payload receiving chamber and extending forwardly from the compression section.

27. A firearm round, comprising:

a sabot including a compression section defining a payload receiving chamber therein, said compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior and exterior surface thereof, a post integrally formed within the payload receiving chamber and a solid section projecting rearwardly from the compression section;

a slug fitted to the post of the sabot;

wherein said compression section is adapted to at least partially annularly collapse upon firing to produce a volume change.

28. The firearm round of claim 27, wherein the slug comprises a stem defining a chamber adapted to receive the post of the sabot.

29. The firearm round of claim 27, wherein the slug projects forwardly from the compression section of the sabot.

30. The firearm round of claim 27, wherein the post substantially fills the payload receiving chamber.

31. The firearm round of claim 27, wherein the slug comprises at least about 95% by weight lead.